

WHAT IS CLAIMED IS:

1. A color-filterless full color liquid-crystal display device comprising:

- a liquid-crystal shutter portion including TN
5 liquid crystal or STN liquid crystal; and
a backlight portion including red at least one
LED, at least one green LED, and at least one blue LEDs,
wherein the number of said blue LEDs is not
smaller than the number of said red LEDs; and
10 the number of said blue LEDs is not smaller than
the number of said green LEDs.

2. A liquid-crystal display device according to
Claim 1, wherein the number of said blue LEDs is not
15 smaller than the number of said red LEDs; and
the number of said blue LEDs is larger than the
number of said green LEDs.

3. A liquid-crystal display device according to
20 Claim 1, wherein two red LEDs, one green LED and two
blue LEDs are mounted on a substrate.

4. A liquid-crystal display device according to
Claim 1, wherein said backlight portion includes a
25 planar light guide laminated on said liquid-crystal

shutter portion so that said LEDs are disposed to face
a side surface of said planar light guide.

5. A liquid-crystal display device according to
5 Claim 4, wherein a reflection layer is formed on a
surface of said light guide.

6. A liquid-crystal display device according to
Claim 1, wherein said backlight portion includes a
10 light emission controller for controlling light
emission of each of said LEDs, said light emission
controller applying a current to said LED to thereby
obtain the maximum light-emitting efficiency of said
LED.

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7. A liquid-crystal display device according to
Claim 1, wherein light is selectively emitted from
each of said LEDs in synchronism with ON/OFF of
corresponding one of pixels in said liquid-crystal
20 shutter portion.

8. A color-filterless full color liquid-crystal
display device comprising:

a liquid-crystal shutter portion including TN
25 liquid crystal or STN liquid crystal; and

a backlight portion including at least one red LED, at least one green LED, and at least one blue LED;

wherein the number of said green LEDs is not larger than the number of said red LEDs; and

5 the number of said green LEDs is not larger than the number of said blue LEDs.

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9. A liquid-crystal display device according to Claim 8, wherein said backlight portion includes a planar light guide laminated on said liquid-crystal shutter portion so that said LEDs are disposed to face a side surface of said planar light guide.

15 10. A liquid-crystal display device according to Claim 9, wherein a reflection layer is formed on a surface of said light guide.

20 11. A liquid-crystal display device according to Claim 8, wherein said backlight portion includes a light emission controller for controlling light emission of each of said LEDs, said light emission controller applying a current to said LED to thereby obtain the maximum light-emitting efficiency of said LED.

12. A liquid-crystal display device according to
Claim 8, wherein light is selectively emitted from
each of said LEDs in synchronism with ON/OFF of
corresponding one of pixels in said liquid-crystal
5 shutter portion.

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